Capital Gains Taxes and the Market Response to Public Information

A thesis submitted in fulfilment of the requirements for the degree of Doctor of Philosophy

Ву

Mahmoud Odat

School of Accounting

University of Technology, Sydney (UTS)

Australia

Certificate of Authorship/Originality

I certify that the work in this thesis has not previously been submitted for a degree nor has it been submitted as part of requirements for a degree except as fully acknowledged within the text.

I also certify that the thesis has been written by me. Any help that I have received in my research work and the preparation of the thesis itself has been acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis.

Signature of Student

Production Note: Signature removed prior to publication.

ii

Acknowledgment

I would like to thank a number of people for their guidance, assistance and support while undertaking this research.

First and foremost, my deepest thanks to my principal supervisor Professor Greg Clinch of the University of Melbourne for his guidance and suggestions. His insight and passion for research have made this research possible. Thanks also to my associate supervisor Associate Professor Peter Wells of the University of Technology, Sydney for his suggestions and assistance.

I also wish to thank the members of the School of Accounting in the University of Technology, Sydney, and the seminar participants at the school for their helpful comments and suggestions. Thanks also to my colleagues in the business postgraduate research students' laboratory who were very helpful when I asked for assistance.

Special thanks to my parents, brothers and sister for their constant encouragement and support over the years.

Finally, thanks to my daughter, Farah, who was born during this study, and gave me the motive and passion to complete my study.

Abstract

In this thesis I theoretically investigate the impact of capital gains taxes on the market response to public information. There are two objectives: First, I employ the model in Shackelford and Verrecchia (2002) to investigate the extent to which differential tax rates on short and long-term capital gains and losses affect equilibrium price and trading volume response to public information disclosure (both 'good' and 'bad news') about the value of a risky asset. Second, I examine whether capital gains taxes affect the information content of equilibrium prices with respect to public information disclosures. In particular, I modify the Shackelford and Verrecchia (2002) model to include exogenous random supply of the risky asset and examine whether asymmetric tax treatment of short and long-term capital gains and losses affects the extent to which market prices reflect public information about the value of the risky asset.

The results indicate that differential tax rates cause equilibrium prices to be more sensitive to public information disclosures. In addition, they result in lower (higher) trading volume around public disclosures when there is a price increase (decrease) due to the magnified tax costs (benefits) associated with realizing a short-term gain (loss). Moreover, differential tax rates cause prices to be, on average, more sensitive to exogenous noisy supply of the risky asset. The results also suggest that the noise effect outweighs the information effect so that prices are, on average, more volatile and less informative with respect to public information.

Contents

Chapter 1:	Introduction	1
Chapter 2:	Background and Prior Research	9
2.1 Inti	roduction	9
2.2 Ca ₁	pital Gains Tax Research 1	0
2.2.1	Overview of Capital Gains Taxes 1	0
2.2.2	The Capitalization of Capital Gains Taxes 1	2
2.2.3	The Lock-In Effect of Capital Gains Taxes	4
2.2.4	The Effect of the Capital Gains Holding Period 1	5
2.2.5	Summary 1	8
2.3 The	e Informational Efficiency of Capital Markets 1	9
2.3.1	Information and Asset Price Determination	<u>!</u> 1
2.3.2	The Informational Role of Prices	:2
2.4 Co	nclusion2	<u>'</u> 4
Chapter 3:	Structure of the Market and Investors' Demand for Risky Assets in	n
the Presence	of Capital Gains Taxes	:6
3.1 Inti	roduction	:6
3.2 The	e Basic Model	:6
3.3 Ch	aracterizing an Investor's Demand Function2	29

3.3.1 Investor Demand Function if only Capital Gains Attract
Differential Tax Rates
3.3.2 Investor Demand Function if both Capital Gains and Losses Attract
Differential Tax Rates
3.4 Conclusion
Chapter 4: Capital Gains Taxes and Equilibrium Price and Trading Volume
Response to Public Information in a Noise-Free Market with Two Types of
Rational Investors
4.1 Introduction
4.2 Defining Equilibrium
4.3 Market Equilibrium if only Capital Gains Attract Differential Tax
Rates
4.3.1 Equilibrium Price and Demand Functions
4.3.2 Trading Volume
4.4 Market Equilibrium if both Capital Gains and Losses Attract
Differential Tax Rates
4.4.1 Equilibrium Price and Demand Functions
4.4.2 Trading Volume
4.5 Conclusion

Chapter 5: Capital Gains Taxes and the 'Information Content' of Securities'	
Prices	69
5.1 Introduction	69
5.2 Defining Equilibrium	70
5.3 Market Equilibrium if only Capital Gains Attract Differential Tax	
Rates	71
5.3.1 The Equilibrium Price Function	71
5.3.2 Comparative Statics	75
5.4 Market Equilibrium if both Capital Gains and Losses Attract	
Differential Tax Rates	81
5.4.1 The Equilibrium Price Function	81
5.4.2 Comparative Statics	85
5.5 Conclusion	88
Chapter 6: Summary and Conclusions	90
6.1 Overview of the Thesis	90
6.2 Limitations and Caveats	93
6.3 Future Work	94
6.3.1 Analytical Extensions	94
6.3.2 Empirical Implications	95
Annendiy A. Proofs	96

Appendix B: Calculations	113
Bibliography	120

List of Figures

Figure 3.1	Investor demand for a risky asset if only capital gains	38
	attract differential tax rates depending on whether they	
	are short or long-term	
Figure 3.2	Investor demand for a risky asset if both capital gains	44
	and losses attract differential tax rates depending on	
	whether they are short or long-term	
Figure 5.1	Equilibrium price regions when only capital gains attract	75
	differential tax rates	
Figure 5.2	Comparative statics based on numerical solution of the	80
	'information content' of prices if only capital gains	
	attract differential tax rates	
Figure 5.3	Equilibrium price regions when both capital gains and	85
	losses attract differential tax rates	
Figure 5.4	Comparative statics based on numerical solution of	88
	equilibrium if both capital gains and losses attract	
	differential tax rates	